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PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 1875.4300000

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]	Application Number	Filed
on _____	10/649,807	August 28, 2003
Signature_____	First Named Inventor Donald G. McMULLIN	
Typed or printed name _____	Art Unit 2618	Examiner Haroon, Adeel

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
    Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☐ attorney or agent of record.
Registration number _____.

☒ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 ____44,757____

_____
Signature

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2/20/09
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No.: 5999
McMullin et al.	Art Unit: 2618
Appl. No.: 10/649,807	Examiner: Haroon, Adeel
Filed: August 28, 2003	Atty. Docket: 1875.4300000
For: **Apparatus and Method for Local Oscillator Calibration in Mixer Circuits**	

Arguments to Accompany the Pre-Appeal Brief Request for Review

Commissioner for Patents
PO Box 1450   *Mail Stop: AF*
Alexandria, VA 22313-1450

Sir:

Applicants hereby submit the following Arguments, in five (5) or less total pages, as attachment to the Pre-Appeal Brief Request for Review Form (PTO/SB/33). A Notice of Appeal is concurrently filed.

Arguments

Applicants' arguments in the Amendment and Reply under 37 C.F.R. § 1.111, filed May 12, 2008, were not properly considered or responded to by the Examiner in the Final Office Action dated August 20, 2008. In particular, the Examiner's response in the Final Office Action was legally and factually deficient because the Examiner failed to adequately show where any of the cited references, alone or in combination, teach or suggest all of the elements recited in the independent claims 1 and 15. For example, regarding Applicants' claim 1, the following steps are not taught or suggested by the combination of references: *disabling an RF input signal applied to an RF port of said first mixer so that said RF port receives no signal input during a calibration mode, and*

leaking said first local oscillator signal from an LO port of said first mixer to an IF port

of said first mixer that is coupled to an input port of said bandpass filter.

For a rejection to be legally adequate under 35 U.S.C. § 103, every claim feature

must be taught, or be obvious to person of ordinary skill in the art, in the combination of

the references. *See Orthopedic Equipment, Inc. v. United States*, 702 F.2d 1005, 1013

(Fed. Cir. 1983). As will be explained below, the combination of Cowley and Bickley

does not teach or suggest each and every feature of independent claims 1 and 15.

Claim 1 recites a method of compensating for passband variation of a bandpass

filter that is operating in a dual conversion receiver, where the bandpass filter is

configured between a first mixer and a second mixer. A dual conversion receiver (also

called a tuner) operates to perform channel selection and down-conversion of a selected

channel in a cable TV environment. The first mixer in the dual conversion receiver

performs a frequency up-conversion to a higher frequency, the bandpass filter with a

fixed passband then performs channel selection, and finally the second mixer performs a

down-conversion of the selected channel to an IF frequency. The channel selection

accuracy is critically dependent on the passband response of the bandpass filter. (*See*,

Specification, para [0004]-[0005])

As discussed above, Applicants' claim 1 recites a method of compensating (and

therefore detecting) for passband variation of the bandpass filter, which is disposed

between the first mixer and the second mixer. Claim 1 specifically recites the following

steps, in part: (1) disabling an RF input signal applied to an RF port of said first mixer *so*

that said RF port receives no signal input during a calibration mode; (2) injecting said

first local oscillator signal into an LO port of said first mixer; (3) leaking said first local

oscillator signal from *a LO port of said first mixer to an IF port* of said first mixer that is

coupled to an input port of said bandpass filter; (4) determining an actual passband of said bandpass filter responsive to said first local oscillator signal. (Claim 1, *emphasis added*) As such, claim 1 relies on *LO-to-IF port leakage* to inject a calibration signal into the bandpass filter for calibration, and specifically recites that the RF port receives *no signal input during the calibration mode.* It is noted that disabling the RF port during the calibration mode (and ensuring no signal at this port), has the advantage of preventing unwanted signal mixing in the first mixer when the LO signal is injected into the LO port.

Independent claim 15 is an apparatus claim that recites features similar to claim 1, i.e., wherein a RF port of said first mixer receives *no signal during said calibration mode,* and wherein said local oscillator signal leaks *from said LO port to said IF output of said first mixer* for input into said bandpass filter. Claim 27 recites similar features.

In the Final Office Action, the Examiner rejected independent claims 1 and 15 as being unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 6,954,625 to Cowley *et al.* ("Cowley") in view of U.S. Patent No. 5,822,687 to Bickley *et al.* ("Bickley"). (Final Office Action, para 4.) The Office Action admits that Crowley does not teach the claim feature of *disabling an RF input signal applied to an RF port of said first mixer so that said RF port receives no signal input during a calibration mode. (See,* Final Office Action, para 4) This is clear from FIG. 1 of Crowley because the reference oscillator 6 is used to inject a calibration signal into the RF port of the first mixer 5 for filter calibration. *(See,* Crowley, FIG. 1, col. 4 ll. 13-21) Accordingly, it is impossible for Crowley to teach Applicants step of *disabling an RF input signal...* Further, Crowley also does not teach at least the features of: *injecting said first local oscillator signal into an LO port of said first mixer;* and *leaking said first local oscillator signal from an LO port*

of said first mixer to an IF port of said first mixer that is coupled to an input port of said bandpass filter, as recited in Applicant's claim 1. This is so because the calibration signal in Crowley is injected into the RF port of mixer 5, and not the LO port of mixer 5. (*See*, Crowley, FIG. 1., col. 4 ll. 13-21)

The Office Action attempts to remedy the deficiencies of Crowley with the teachings of FIG. 1 in Bickley. Bickley does perform filter calibration on filter 16, but utilizes a different mechanism than that of Applicants' claim 1. (Bickley, FIG. 1, col. 3, ll 6-13) Namely, Bickley utilizes *LO-to-RF port* leakage through mixer 18, in order to inject the signal F_S into the *output* of filter 16 to perform the calibration. (*See*, Bickley, FIG. 1, port 38 of mixer 18 is the RF port, port 40 is the LO port) In contrast, Applicant's claim 1 recites the step of *leaking said first local oscillator signal from an* **LO port of said first mixer to an IF port** *of said mixer that is coupled to an input port of said bandpass filter*. (*See*, claim 1). In other words, Applicants' claim 1 utilizes *LO-to-IF leakage* to inject the LO signal into the filter input. Whereas, Bickley uses *LO-to-RF leakage*. Bickley does not, and cannot perform Applicants' recited step, because the LO-to-IF path in Bickley is **not connected to filter 16**, but instead is connected to the IF output 32. (*See*, Bickley FIG.1)

Further, because Bickley relies on *LO-to-RF port* leakage, the calibration signal necessarily exists at the RF port 38 of mixer 18, and therefore Bickley cannot teach Applicants' feature of *disabling an RF input signal applied to an RF port of said first mixer so that* **said RF port receives no signal input during a calibration mode**, as recited in claim 1. This distinction is important because any signal at the RF port of the mixer 18 in Bickley is naturally going to mix with the signal F_S applied at the LO port 40, generating spurious signals that are detrimental to the filter calibration.

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In summary, Bickley does not teach or suggest the claim feature of *leaking said first local oscillator signal from an LO port of said first mixer to an IF port of said first mixer that is coupled to an input port of said bandpass filter*, because Bickley relies on LO-to-RF leakage. Further, Bickley expressly teaches away from Applicants' claimed features of *disabling an RF input signal applied to an RF port of said first mixer so that **said RF port receives no signal input during a calibration mode**,* because Bickley's LO-to-RF leakage necessarily puts a signal at the RF port of the subject mixer.

Accordingly, Bickley does not remedy the deficiencies of Crowley, and therefore the combination of Crowley and Bickley does not teach or suggest each and every feature of Applicants' independent claim 1, and therefore does not meet the requirements of *prima facie* obviousness. (*See*, MPEP 2143A) Applicants' independent claim 15 includes features similar to those of Applicants' claim 1 as discussed above, and therefore the combination of Crowley and Bickley also does not render this claim obvious. Based on the discussion above, the Examiner's continued rejection of the independent claims 1 and 15 based on the combination of Crowley and Bickley is both legally and factually deficient.   Claim 27 is also allowable for the same reasons.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

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